

## APPENDIX C

### EMERGENCY PROCEDURES

**T**his appendix contains generic standard operation procedures (SOPs) for emergency collection system activities. These generic SOPs can be adapted to fit specific collection system needs. They are not presented as inclusive of all situations or circumstances. Please contact the appropriate state or federal environmental regulatory agency for guidance on your state's specific emergency circumstances and procedures.

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**PROBLEM: Partially or Totally Blocked Siphon**

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**EMERGENCY PROCEDURES:**

- Dispatch sewer crew to failing siphon immediately.
- Immediately have jet-flushing vehicle brought to the site if a blockage is discovered.
- If the cause of a blockage is unknown use a single port cutting nozzle and attach the nozzle to the jet-flushing machine.
- If sewage is discharging to the environment, follow instructions defined in Overflowing Sewer Manhole Resulting from Surcharged Trunk Sewer for containment and cleanup.
- Insert the proper size sandtrap in the downstream invert of the downstream manhole to trap the debris causing the blockage.
- Start flushing the siphon between 1000 and 1500 psi against the flow, using the high velocity jet-flushing vehicle brought to the site if a blockage is discovered. Work the nozzle back and forth until minimal debris is observed in the down stream manhole.
- If the blockage is grease related, use a grease solvent in accordance with policy. Care should be observed when working with chemicals. Refer to material safety data sheets (MSDS) prior to use.
- The crew leader should take appropriate still photographs and video footage; if possible, of the outdoor area of the sewer over flow and impacted area to thoroughly document the nature and extent of the impacts.
- Make out a report indicating: the time of the call, description of the problem, how the repair was made, personnel present and equipment used.
- If sewage bypassed the collection system, file DEP Bypass Notification Log and Bypass Report Form as required by NPDES Permit.

**NOTE:**

1. Permit(s) must be obtained from the Long Island Sound Program if there is to be any work in a tidal wetland area.

<b>Minimum Levels of Staffing (people): 4</b>	
<b>Minimum Emergency Equipment</b>	<b>Specialized Equipment</b>
<ul style="list-style-type: none"> <li>• Jet flushing unit if available (sand trap)</li> <li>• Rodding machine &amp; associated cleaning/cutting attachments (sand trap)</li> <li>• Standard disinfectants</li> <li>• Safety harness and lifeline if applicable</li> <li>• Air blower with hose</li> <li>• Power vacuum</li> <li>• Portable pumps</li> <li>• Portable generators</li> <li>• Safety cones/barricades</li> <li>• Gas meter-for oxygen deficient, explosive or toxic gases</li> <li>• Confined space entry tri-pod and associated equipment</li> </ul>	<ul style="list-style-type: none"> <li>• TV camera unit</li> <li>• Truck with hoist</li> <li>• Vactor unit</li> <li>• Caution tape</li> <li>• Sand trap</li> <li>• Flotation booms if necessary</li> <li>• Self Contained Breathing Apparatus (SCBA)</li> </ul>

**PROBLEM: Wastewater Pump Station Alarms—General Response Actions****EMERGENCY PROCEDURES:**

- Send an individual to the station indicating an alarm within ten minutes of a priority alarm. Respondents should bring a detailed station-specific trouble-shooting guide with them for that particular station. If serious trouble is found, call for additional assistance and keep an individual at the station until further instructions are received.
- Always check with the power company when an alarm goes on to see if there is a power outage in the area. There are times when a power failure has occurred at a pump station, which has not been reported to the power company promptly. The pole number nearest the station should be reported.
- Personnel called in to investigate pump station alarms shall respond to the station even if the alarm has cleared prior to their arrival. All alarm conditions are to be checked and logged. Use the following guidelines and follow confined space entry procedures if applicable:

**Wetwell/drywell Type Stations**

1. Check atmosphere within drywell prior to entering with gas meter.
2. Take your time entering the drywell. Never enter a flooded drywell.
3. Note any unusual odors - i.e. burning electrical equipment or paint.
4. Listen and note any unusual noises.
5. Lightly touch pump motors and pump bearing housing. Note any which seem unusually hot.
6. Observe every piece of equipment in the station. Note anything which looks out of place.
7. Record all gage readings i.e.: wet well level, hour meters, flow charts, on-off levels, psi gauges on pump, rpm (on VFD's) and anything else which you feel is significant.
8. Based on the available information, trouble-shoot the failure. Using the trouble shooting guide, systematically run through the system. By process of elimination, the failure will be isolated. Check level controls, check pump operation using manual position, check pump output by pressing on check valve counterweight as defined in the trouble-shooting guide. Once problem is isolated, engage mechanical or electrical disciplines for repairs.
9. Emergency personnel should be absolutely certain that the cause of the pump station alarm or failure has been properly identified and corrected prior to leaving the station.
10. Reset any/all alarm feature indicator lights.

**Submersible Type Stations**

1. Check atmosphere within wetwell prior to working over the top with gas meter.
2. Note any unusual odors - i.e. burning electrical equipment or paint.
3. Listen and note if pump(s) are running and any unusual noises.
4. Observe every piece of equipment in the station (pay specific attention to the level control system). Note anything which looks out of place.
5. Record all gage readings from the control panel i.e.: wet well level, hour meters, flow charts, on-off levels, psi gauges on pump, rpm (on VHD's) and anything else which you feel is significant.

6. Based on the available information, trouble-shoot the failure. Using the trouble-shooting guide, systematically run through the system. By process of elimination, the failure will be isolated. Check level controls, check pump operation using manual position, check pump output by observing the check valve counterweight as defined in the trouble shooting guide. Once problem is isolated, engage mechanical or electrical disciplines for repairs
  7. Emergency personnel should be absolutely certain that the cause of the pump station alarm or failure has been properly identified and corrected prior to leaving the station.
  8. Reset any/all alarm feature indicator lights.
- Various types of level sensors may be present in the pump station, including bubbler systems, float switches, transducers, or rod-type probes. Similarly various types of controls may be present for pump cycling including pneumatic systems, simple relays and/or computerized processors. The responding crew should be fully capable and trained in the proper function of each of these systems present within the municipality. Trouble shooting these controls is specific to the unit. Consequently, the O&M manual for the level sensor system and pump controls should be consulted during a failure.
  - Pumps may be checked easily for operation by checking the arm of the check-valve in the discharge line of an operating pump. If it feels "spongy" (or soft) when downward pressure is applied with the palm of the hand, the pump is pumping. If a breaker is off and the pump motor is hot to the touch, DO NOT attempt to reset and start. If a pump motor is simply warm, one attempt to restart can be made. Turing the selector switch to manual will normally start a pump, and the check valve arm should move upwards. If the pump has lost prime or is lugged, the check valve will not open.

<b>Minimum Levels of Staffing (people): 2</b>	
<b>Minimum Emergency Equipment</b>	<b>Specialized Equipment</b>
<ul style="list-style-type: none"> <li>• Gas meter-for oxygen deficient, explosive or toxic gases</li> <li>• Self Contained Breathing Apparatus (SCBA)</li> <li>• Harness and lifeline</li> <li>• Personnel protection equipment</li> </ul>	<ul style="list-style-type: none"> <li>• As applicable for trouble-shooting</li> </ul>

**PROBLEM: Pumping Station Failure Caused by Force-Main Break Inside the Drywell, Pump or Valve Failure. (Wetwell/Drywell Type Station)**

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**EMERGENCY PROCEDURES:**

- Dispatch pumping station crew to the pumping station immediately.
- Upon arrival the crew should identify if the drywell and wetwell are flooded. The pumps may be still pumping if the motor is located at floor level and the pumps are on the lower level or if drypit submersibles were installed.
- After further investigation, the crew should determine the nature of the failure, i.e. pump(s), valve(s) or force main(s) if possible prior to entering the drywell.
- Call additional crew to bring appropriate portable pump(s) including all required lengths of suction and discharge hose, to the pumping station.
- Before entering the drywell, measure the atmospheric conditions for sufficient oxygen and the presence of explosive or toxic gases. Remove all hazards as appropriate prior to entering station (including electrical and engulfment hazards).
- Constantly monitor the atmospheric conditions while working in the drywell of the station.
- Upon arrival of the portable pump, connect the appropriate lengths of suction hose that will suspend well into the wetwell, and then connect enough discharge hose to pump into bypass connection.
- Lock out and tag out (LOTO) the main line, disconnect (if applicable).
- Set up an additional portable trash pump to pump out the drywell into the wetwell.
- Enter drywell and inspect the following facilities:
  - Lighting
  - Ventilation
  - Sump pump operation
  - Motor control system including air compressors
  - Auxiliary power systems and controls
  - Bubbler system (if applicable)
  - Pump alternator or processor
  - Control and instrument readings
  - MCC failure indicators
  - Temperature of pump motors
  - All internal piping
- Isolate the failed component by valve operation. Start the auxiliary pump and motor, if possible (after exiting the drywell). Shut down bypass operation if possible.
- Complete repairs to pipe, pump or valve as per policy. If permanent materials are not readily available, install blind flanges for temporary conditions. If auxiliary systems associated with the permanent station are in operation, LOTO prior to installing repaired components.

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- Restore facilities to normal and inspect other components of the force main and pumping system for signs of similar failure.
- Shut down bypass operation. Do not disconnect hoses until repair is checked for leaks. Operate pumps to check repair under pressure and normal operating conditions.
- If no leaks are observed, return pumps to normal conditions by removing LOTO. Monitor pumps to check lead/lag operations.
- Proceed to wetwell for inspection. Before entering the wetwell, measure the atmospheric conditions for sufficient oxygen and the presence of explosive or toxic gases. Check the following as facilities applicable:
  - Lighting
  - Ventilation
  - Wetwell level
  - Bar rack and/or comminutor (if applicable)
  - Float controls/level sensors
  - Grease assessment
- Make out a report indicating; the time of the call, description of the problem, how the repair was made, personnel present and equipment used.
- If sewage bypassed the collection system, file DEP Bypass Notification Log and Bypass Report Form as required by NPDES Permit.

Minimum Levels of Staffing (people): 2–4	
Minimum Emergency Equipment	Specialized Equipment
<ul style="list-style-type: none"><li>• Harness and lifeline</li><li>• Flash light</li><li>• Emergency lighting</li><li>• Portable pumps and hoses</li><li>• Miscellaneous tools</li><li>• Personal protection equipment</li><li>• Gas meter-for oxygen deficient, explosive or toxic gases</li></ul>	<ul style="list-style-type: none"><li>• Self Contained Breathing Apparatus (SCBA)</li></ul>



**PROBLEM: Pumping Station Failure Caused by Force-Main Break Inside Valve Pit, Pump or Valve Failure. (Submersible Type Application)**

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**EMERGENCY PROCEDURES:**

- Dispatch pumping station crew to the pumping station immediately.
- Upon arrival the crew should identify the storage capacity in the wetwell. This will give some indication of the time available for response.
- Inspect the motor control circuit looking for failure indications. Check processor to determine failure if applicable. If pump failure is determined, skip to wetwell inspection steps.
- Inspect the valve pit. Observe all valves and force mains. If flooded, arrange to pump out the valve pit. If failure within the valve pit is detected, skip to bypass steps.
- Prior to viewing the wetwell, measure the atmospheric conditions for sufficient oxygen and the presence of explosive or toxic gases. If flooded, skip to bypass steps.
- Constantly monitor the atmospheric conditions while working in or above the wetwell. Inspect the wetwell. Check the wetwell floats or level control system, bar rack and pump volute are for clogging or other problems.

**Bypass Steps**

- If pump failure, determine if bypass pumping is necessary. If unnecessary skip to repair procedures.
- Bypass pump. Call additional crew to bring appropriate portable pump(s) including all required lengths of suction and discharge hose, to the pumping station if necessary. Upon arrival of the portable pump, connect the appropriate lengths of suction hose that will suspend well into the wetwell, and then connect enough discharge hose to pump into appropriate manhole or bypass connection (if so equipped). Go through the procedures for starting the portable pump, and begin pumping.

**Repair Steps**

- Lock out and tag out (LOTO) the main line, disconnect (if applicable).
- If pump station valve pit is flooded, pump out the valve pit with portable trash pump as necessary to effect repairs.
- Enter valve pit or wet well and inspect the piping and valves for cause of failure. (Monitor the atmospheric conditions for sufficient oxygen and the presence of explosive or toxic gases).
- Complete repairs to pipe, pump or valve as per policy. If permanent materials are not readily available, install temporary repairs until the permanent repairs can be completed.
- Restore facilities to normal and inspect other components of the force main and pumping system for signs of similar failure.

## Optimizing Operation, Maintenance, and Rehabilitation of Sanitary Sewer Collection Systems

- Shut down bypass operation. Do not disconnect hoses until repair is checked for leaks. Operate pumps to check repair under pressure and normal operating conditions.
- If no leaks are observed, return pumps to normal conditions by removing LOTO. Monitor pumps to check lead/lag operations.
- Make out a report indicating; the time of the call, description of the problem, how the repair was made, personnel present and equipment used.
- File DEP Bypass Notification Log and By-Pas Report Form as required by NPDES Permit.

### NOTES:

1. Permit(s) must be obtained from the Long Island Sound Program if there is to be any work in a tidal wetland area.

Minimum Levels of Staffing (people): 2–4	
Minimum Emergency Equipment	Specialized Equipment
<ul style="list-style-type: none"><li>• Harness and lifeline</li><li>• Flash light</li><li>• Emergency lighting</li><li>• Portable pumps and hoses</li><li>• Gas meter-for oxygen deficient, explosive or toxic gases</li><li>• Personal protection equipment</li></ul>	<ul style="list-style-type: none"><li>• Self Contained Breathing Apparatus (SCBA)</li></ul>

**PROBLEM: Pumping Station Failure Caused by Secondary Power Failure During Power Outage**

**EMERGENCY PROCEDURES:**

- Dispatch pumping station crew to the pumping station immediately. The crew needs to bring the auxiliary generator for that specific station as a backup assuming that repair to the dedicated generator is untimely.
- Dispatcher shall request the assistance of the power company in restoring power to the station if necessary. Determine the estimated time of arrival of the power company crew and then notify the pumping station operators.
- Pumping station operators should check the overhead power lines for fuses that might have blown or down power lines as they approach the pumping station. If the operators notice a blown fuse or down power line, identify the pole number(s), and notify the dispatcher to relay to the power company the location and the pole number(s).
- Lock out and tag out (LOTO) the main line, disconnect (if applicable).
- Check all components of dedicated generator to determine failure cause. Utilize manufacturer prepared trouble-shooting guide to aid in diagnosis. If unrepairable immediately, connect the portable generator to the auxiliary power connection located outside the building. Examine plug type and ensure consistency. Use adapters as necessary.
- Go through the specific procedures for starting the generator to supply power to the station.
- Obtain the services of a qualified generator repair facility to address the dedicated generator failure.
- Once fully repaired, disconnect the portable generator and reconnect the dedicated unit. Operate the dedicated unit through several pump cycles. Check unit for regular exercise.

<b>Minimum Levels of Staffing (people): 2–3</b>	
<b>Minimum Emergency Equipment</b>	<b>Specialized Equipment</b>
<ul style="list-style-type: none"> <li>• Harness and lifeline</li> <li>• Flash light</li> <li>• Emergency lighting</li> <li>• Portable generator</li> <li>• Personal protection equipment</li> <li>• Gas meter-for oxygen deficient, explosive or toxic gases</li> </ul>	<ul style="list-style-type: none"> <li>• Power testing equipment</li> </ul>

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**PROBLEM: Sewer Blockage or Surcharging into Basement**

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**EMERGENCY PROCEDURES:**

- Dispatch the sewer crew to the complainant address immediately.
- If the flow is questionable (not reasonable for the given service area) go to the upstream manhole to visually compare flows.
- If the flow from both manholes is reasonable for the area, notify the property owners that the problem is in their service lateral and to contact a plumber or sewer service contractor to relieve the blockage.
- Refer to sewer maps for location of sewers (private lands, flow patterns, manholes, etc.) and determine if the area is served by a pump station, before responding to the call.
- If the area of complaint is served by a pump station, check to see if any alarms from the pump station have been received at the WPCF.
- Notify the property owner you are on the site, upon arrival.
- Check flow in downstream manhole from the complaint location.
- Install the proper size sandtrap in the downstream invert of the manhole before clearing the blockage to capture the debris. From the debris collected try to determine the cause of the blockage and remove the debris from the manhole.
- Use the necessary equipment to relieve the blockage, either by jet flushing or power rodding.
- If the downstream manhole is flowing full, continue checking manholes downstream until a dry manhole is found. Clear blockage upstream from the dry manhole.
- Notify supervisor and describe the bypass. The supervisor will notify the proper authorities and agencies: (See notification charts)
- If the blockage is in city/town main line, relieve the blockage, clean up the property owner's basement as per policy and spray an industry standard disinfectant. If blockage is determined to be in property owner's lateral connection, direct property owner to his/her responsibility to clear.
- Make out a report indicating; the time of the call, description of the problem, how the repair was made, personnel present and equipment used.
- If sewage bypassed the collection system, file DEP Bypass Notification Log and Bypass Report Form as required by NPDES Permit.

**NOTES:**

1. Install the proper size sandtrap in the downstream invert of the manhole before clearing the blockage to capture the debris. From the debris collected try to determine the cause of the blockage and remove the debris from the manhole.
2. Record the water damage to all items in the basement. Record all actions taken (from start to finish) in log/record book, including equipment and personnel that were utilized.

<b>Minimum Levels of Staffing (people): 2</b>	
<b>Minimum Emergency Equipment</b>	<b>Specialized Equipment</b>
<ul style="list-style-type: none"> <li>• Jet flushing unit if available (sand trap)</li> <li>• Rodding machine &amp; associated cleaning/cutting attachments (sand trap)</li> <li>• Standard harness and lifeline if applicable</li> <li>• Air blower with hose</li> <li>• Power vacuum</li> <li>• Portable pumps</li> <li>• Portable generators</li> <li>• Safety cones/barricades</li> <li>• Gas meter – for oxygen deficient, explosive or toxic gases</li> <li>• Confined space entry tripod and associated equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Television</li> <li>• Truck with hoist</li> <li>• Vactor unit</li> <li>• Power saw (circular)</li> <li>• Pipe cutter (hydraulic)</li> <li>• Caution tape</li> <li>• Sand trap</li> <li>• Self Contained Breathing Apparatus (SCBA)</li> </ul>

## STEPS TO BE TAKEN BY PROPERTY OWNERS WHEN SEWAGE BACK-UP OCCURES

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Call and report stoppage. Use phone numbers listed for WPCF at night. The WPCF will check the main sewer for blockage. If the main sewer is blocked the WPCF will clear it. **If the main sewer is clear then the property owner must hire a licensed plumber, drain layer, or sewer cleaner to free any blockage, which might exist in their lateral.** The property owner is responsible to pay for this activity.

### **NOTE: PROPER RODDING PROCEDURE GUIDELINE**

In cases where a property owner needs to free a blockage within their lateral, the following procedures shall be implemented. The plumber shall use a 4" cutter at the end of the rod. If the plumber relieves the blockage, he shall then rod the house connection to the main sewer line.

If the blockage is found in the portion of the sewer house connection located within private property, the owner must hire a licensed contractor to perform the necessary repair work, under permit and inspection from the local WPCF.

All repair work on the sewer house connection must be performed under permit issued by the WPCF to a licensed contractor, and will be inspected by the local WPCF personnel.

### **RODDINGS:**

If the property owner, licensed plumber, drain layer or sewer cleaner does not call the WPCF and request the main sewer check prior to rodding. The WPCF will not assume liability if the problem is located in the main sewer.

If there is a blockage, but no record of the house connection, the owner must prove where the blockage is located. This can be done by excavation or electronic locator in the presence of an inspector.

The WPCF requires proper rodding procedures. The rodder must use a 4" cutter. If he can't break through the blockage, he will then start using smaller cutters back up to 4". He will then push the blockage into the main sewer.

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**PROBLEM: Overflowing Sewer Manhole Resulting from Surcharged Trunk Sewer  
(No backup into building)**

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**EMERGENCY PROCEDURES:**

- Dispatch the sewer crew immediately to the problem location.
- Refer to sewer maps for location of sewers (private lands, flow patterns, manholes, etc.) and determine if the area is served by a pump station, before responding to the call.
- Go to the location of the overflowing manhole to access the immediate danger to the environment.
- Determine the location of the blockage by inspecting the downstream manholes until a dry manhole is found.
- Install the proper size sandtrap in the downstream invert of the manhole before clearing the blockage to capture the debris. From the debris collected try to determine the cause of the blockage and remove the debris from the manhole.
- Use the necessary equipment to relieve the blockage, either by jet flushing or power rodding.
- If it is imminent that the waste water will be released into wetlands receiving waters or a drinking water supply watershed, then the supervisor should be notified. The supervisor will notify the proper authorities and agencies: (See notification charts)
- Call in additional crews to set up flotation booms across streams, brooks, bypass pumping, etc., as necessary. Unless special conditions exist, freeing the blockage is the priority before containing the bypass.
- Gather and remove sewage related debris and organic matter from the affected area.
- If the waste water is in the streets/roads (public or private), then contain the waste water as best as possible with sand bags or other industry accepted alternatives to minimize any impact to public health or the environment.
- Sandbag nearby catch basin inlets or paved leak-offs to prevent the waste water from entering the drainage system and causing potential contamination to the tributary receiving waters.
- If ponding should occur on the street or easement (public or private), cordon off the area.
- Remove as much of the sewage as possible.
- Disinfect the ponding areas with an industry standard disinfectant and notify the surrounding homes.
- If the waste water should jeopardize a playground or park, cordon off the entire area. Close the park to the public until the issue has been remedied to the satisfaction of the local and state boards of health and the local park superintendent.

## Optimizing Operation, Maintenance, and Rehabilitation of Sanitary Sewer Collection Systems

- Make out a report indicating; the time of the call, description of the problem, how the repair was made, personnel present and equipment used.
- If sewage bypassed the collection system, file DEP Bypass Notification Log and Bypass Report Form as required by NPDES Permit.

### NOTE:

1. Permit(s) must be obtained from the Long Island Sound Program if there is to be any work in a tidal wetland area.

Minimum Levels of Staffing (people): 2-3	
Minimum Emergency Equipment	Specialized Equipment
<ul style="list-style-type: none"> <li>• Jet flushing unit if available (sand trap)</li> <li>• Rodding machine &amp; associated cleaning/cutting attachments (sand trap)</li> <li>• Standard disinfectants</li> <li>• Safety harness and lifeline if applicable</li> <li>• Air blower with hose</li> <li>• Power vacuum</li> <li>• Portable pumps</li> <li>• Portable generators</li> <li>• Safety cones/barricades</li> <li>• Gas meter-for oxygen deficient, explosive or toxic gases</li> <li>• Confined space entry tri-pod and associated equipment</li> </ul>	<ul style="list-style-type: none"> <li>• TV camera unit</li> <li>• Truck with hoist</li> <li>• Vactor unit</li> <li>• Power saw (circular)</li> <li>• Pipe cutter (hydraulic)</li> <li>• Caution tape</li> <li>• Sand trap</li> <li>• Flotation booms if necessary</li> <li>• Self Contained Breathing Apparatus (SCBA)</li> </ul>

**PROBLEM: Sewage Force-Main Break (residential neighborhood)**

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**EMERGENCY PROCEDURES:**

- Dispatch a sewer crew to the site to assess the immediate danger to the environment and to determine who and what might be affected.
- Refer to the sewer maps for location of sewers (private lands flow patterns, manholes, etc.) and determine if the area is served by a pump station, before responding to the call.
- Request additional manpower and equipment as needed based on initial damage assessment (e.g. excavating crew, bypass pumping equipment, etc.).
- Bypass pumping from the pump station wetwell to the force main discharge manhole may be required. If necessary, set up bypass pumping equipment.
- Call in additional crews to set up flotation booms across streams, brooks, sandbagging, etc., as necessary. Unless special conditions exist, bypassing the broken force main is a priority before containing the bypass.
- Gather and remove sewage related debris and organic matter from the affected area.
- If the waste water is in the streets/roads (public or private), then contain the waste water as best as possible with sand bags or other industry accepted alternatives to minimize any impact to public health or the environment.
- Sandbag nearby catch basin inlets or paved leak-offs to prevent the waste water from entering the drainage system and causing potential contamination to the tributary receiving waters.
- If ponding should occur on the street or easement (public or private), cordon off the area.
- Remove as much of the sewage as possible.
- Disinfect the ponding areas with an industry standard disinfectant and notify the surrounding homes.
- If the waste water should jeopardize a playground or park, cordon off the entire area. Close the park to the public until the issue has been remedied to the satisfaction of the local and state boards of health and the local park superintendent.
- After the bypass pumping equipment is at the site and in place, lock-out and tag-out (LOTO) the pumps in the pumping station.
- Draw down the wetwell as much as possible and maintain low level.
- Drain the force-main by first closing down the gate valve on the upstream side of the discharge check valve in the pumping station.
- Open the check valve by hand and secure it in place.

- Slowly bleed the force-main back into the wetwell by slowly opening the gate valve on the discharge side of the pump, but only to the point where the force-main stops leaking and there is enough room to make the repair. Constant communication must take place between the crew located at the break and the crew located at the pump station.
- Close the gate valve and return the check valve to its normal operating position and then fully open the gate valve.
- Repair force main break as per policy.
- After the repair is complete, remove LOTO and return the pumps to normal operating position.
- Run the pump in the hand manual position to fill the force-main. Once completed, observe several pumping cycles before completely back-filling the excavation.
- Upon confirmation of adequacy of the repair, backfill the excavation (if necessary) and restore surface conditions to match existing conditions.
- While the crew is restoring the excavation, the crew leader should conduct a preliminary assessment of damage to private and public property. The crew leader should take appropriate still photographs and video footage; if possible, of the outdoor area of the sewer over flow and impacted area to thoroughly document the nature and extent of the impacts.
- Make out a report indicating,; the time of the call, description of the problem, how the repair was made, personnel present and equipment used.
- If sewage bypassed the collection system, file DEP Bypass Notification Log and Bypass Report Form as required by NPDES Permit.

**NOTE:**

1. Permit(s) must be obtained from the Long Island Sound Program if there is to be any work in a tidal wetland area.

<b>Minimum Levels of Staffing (people): 4</b>	
<b>Minimum Emergency Equipment</b>	<b>Specialized Equipment</b>
<ul style="list-style-type: none"> <li>• Jet flushing unit if available (sand trap)</li> <li>• Rodding machine &amp; associated cleaning/cutting attachments (sand trap)</li> <li>• Standard disinfectants</li> <li>• Safety harness and lifeline if applicable</li> <li>• Air blower with hose</li> <li>• Power vacuum</li> <li>• Portable pumps</li> <li>• Portable generators</li> <li>• Safety cones/barricades</li> <li>• Gas meter-for oxygen deficient, explosive or toxic gases</li> <li>• Confined space entry tri-pod and associated equipment</li> </ul>	<ul style="list-style-type: none"> <li>• TV camera unit</li> <li>• Truck with hoist</li> <li>• Vactor unit</li> <li>• Power saw (circular)</li> <li>• Pipe cutter (hydraulic)</li> <li>• Caution tape</li> <li>• Sand trap</li> <li>• Flotation booms if necessary</li> <li>• Self Contained Breathing Apparatus (SCBA)</li> </ul>

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**PROBLEM: Sewage Force-Main Break (cross country easement non-residential area)**

**EMERGENCY PROCEDURES:**

- Dispatch a sewer crew to the site to assess the immediate danger to the environment and to determine who and what might be affected.
- Refer to the sewer maps for location of sewers (private lands flow patterns, manholes, etc.) and determine if the area is served by a pump station, before responding to the call.
- Request additional manpower and equipment as needed based on initial damage assessment (e.g. excavating crew, bypass pumping equipment, etc.)
- Bypass pumping from the pump station wetwell to the force main discharge manhole may be required. If necessary, set up bypass pumping equipment.
- If bypass pumping is not an option, then the line may need to be repaired under pressure. Shut down the pumping station only if detention time is known and can be mitigated.
- Call in additional crews to set up flotation booms across streams, brooks, sandbagging, etc., as necessary. Unless special conditions exist, bypassing the broken force main is a priority before containing the bypass.
- The crew shall initiate measures to contain the sewer overflow as best as possible, cordon off the affected area and place absorbing booms or sand bags to collect any floatable debris.
- Check the tributary area to determine if the discharge will affect any receiving waters.
- If it is determined that the receiving water may be affected, and then the dispatcher should notify the proper authorities or agency.
- If the break is on the pipe length, then a repair can be made with a wrap-around sleeve. If the break is at the bell, then a bell-joint clamp may be used.
- If a repair cannot be made while the line is under pressure or bypass pumping cannot be completed, then only two (2) alternatives exist:
  1. Utilize a vactor truck to remove the water from the wetwell. Discharge the water into a manhole in a different tributary area or at the treatment plant.
  2. If the vactor truck has insufficient volume, the scenario may require the assistance of several tanker trucks or the use of a fractionalization tank to perform this function.
- Refer to the force-main break in residential neighborhood and follow the procedure for draining the force-main and returning the pumping station to normal operating procedures.
- Upon confirmation of adequacy of the repair, backfill the excavation (if necessary) and restore surface conditions to match existing conditions.

- While the crew is restoring the excavation, the crew leader should conduct a preliminary assessment of damage to private and public property. The crew leader should take appropriate still photographs and video footage; if possible, of the outdoor area of the sewer over flow and impacted area to thoroughly document the nature and extent of the impacts.
- Make out a report indicating,; the time of the call, description of the problem, how the repair was made, personnel present and equipment used.
- If sewage bypassed the collection system, file DEP Bypass Notification Log and Bypass Report Form as required by NPDES Permit.

**NOTE:**

1. Permit(s) must be obtained from the Long Island Sound Program if there is to be any work in a tidal wetland area.

<b>Minimum Levels of Staffing (people): 4</b>	
<b>Minimum Emergency Equipment</b>	<b>Specialized Equipment</b>
<ul style="list-style-type: none"> <li>• Jet flushing unit if available (sand trap)</li> <li>• Rodding machine &amp; associated cleaning/cutting attachments (sand trap)</li> <li>• Standard disinfectants</li> <li>• Safety harness and lifeline if applicable</li> <li>• Air blower with hose</li> <li>• Power vacuum</li> <li>• Portable pumps</li> <li>• Portable generators</li> <li>• Safety cones/barricades</li> <li>• Gas Meter-for oxygen deficient, explosive or toxic gases</li> <li>• Confined space entry tri-pod and associated equipment</li> </ul>	<ul style="list-style-type: none"> <li>• TV camera unit</li> <li>• Truck with hoist</li> <li>• Vactor unit</li> <li>• Power saw (circular)</li> <li>• Pipe cutter (hydraulic)</li> <li>• Caution tape</li> <li>• Sand trap</li> <li>• Flotation booms if necessary</li> <li>• Self Contained Breathing Apparatus (SCBA)</li> </ul>



**PROBLEM: Sewer Main Break/Collapse**

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**EMERGENCY PROCEDURES:**

- Dispatch sewer crew to location of break/collapse immediately.
- Set up signs, barricades, and/or barrels for traffic control and public safety.
- Reroute traffic as necessary. Deploy traffic control measures such as, police or flag person as needed.
- Request additional manpower and equipment as needed based on initial damage assessment (e.g. excavating crew, bypass pumping equipment, etc.).
- Bypass pumping from the upstream manhole to the downstream manhole may be required. If necessary, set up bypass pumping equipment. If not necessary, prepare for repairs while the pipe is flowing.
- Call in additional crews to set up flotation booms across streams, brooks, sandbagging, etc., as necessary. Unless special conditions exist, bypassing the failed sewer main is a priority before containing the bypass.
- Gather and remove sewage related debris and organic matter from the affected area.
- If the waste water is in the streets/roads (public or private), then contain the waste water as best as possible with sand bags or other industry accepted alternatives to minimize any impact to public health or the environment.
- Sandbag nearby catch basin inlets or paved leak-offs to prevent the waste water from entering the drainage system and causing potential contamination to the tributary receiving waters.
- If ponding should occur on the street or easement (public or private), cordon off the area.
- Remove as much of the sewage as possible.
- Disinfect the ponding areas with an industry standard disinfectant and notify the surrounding homes.
- If the waste water should jeopardize a playground or park, cordon off the entire area. Close the park to the public until the issue has been remedied to the satisfaction of the local and state boards of health and the local park superintendent.
- Determine the location of the break/collapse and make any necessary repairs. Use repair procedures consistent with policy. If the break is on the pipe length, then a repair can be made with a wrap-around sleeve. If the break is at the bell, then a bell-joint clamp may be used.
- Upon confirmation of adequacy of the repair, backfill the excavation (if necessary) and restore surface conditions to match existing conditions.

## Optimizing Operation, Maintenance, and Rehabilitation of Sanitary Sewer Collection Systems

- To restore the sewer line to full capacity, the crew should remove any debris that may have entered and accumulated in the sewer line downstream and upstream from the break/collapse. The crew should clean the sewer line as described below.
- Install the proper size sandtrap in the downstream invert of the downstream manhole to trap any debris, which may have, accumulated in the sewer line.
- Using a high velocity jet-flushing vehicle, begin flushing from the downstream manhole against the flow to the upstream manhole.
- Repeat this procedure for several upstream and downstream pipe reaches.
- The crew leader should take appropriate still photographs and video footage; if possible, of the outdoor area of the sewer over flow and impacted area to thoroughly document the nature and extent of the impacts.
- Make out a report indicating; the time of the call, description of the problem, how the repair was made, personnel present and equipment used.
- If sewage bypassed the collection system, file DEP Bypass Notification Log and Bypass Report Form as required by NPDES Permit.

### NOTE:

1. Permit(s) must be obtained from the Long Island Sound Program if there is to be any work in a tidal wetland area.

<b>Minimum Levels of Staffing (people): 4</b>	
<b>Minimum Emergency Equipment</b>	<b>Specialized Equipment</b>
<ul style="list-style-type: none"> <li>• Jet flushing unit if available (sand trap)</li> <li>• Rodding machine &amp; associated cleaning/cutting attachments (sand trap)</li> <li>• Standard disinfectants</li> <li>• Safety harness and lifeline if applicable</li> <li>• Air blower with hose</li> <li>• Power vacuum</li> <li>• Portable pumps</li> <li>• Portable generators</li> <li>• Safety cones/barricades</li> <li>• Gas meter-for oxygen deficient, explosive or toxic gases</li> <li>• Confined space entry tri-pod and associated equipment</li> </ul>	<ul style="list-style-type: none"> <li>• TV camera unit</li> <li>• Truck with hoist</li> <li>• Vactor unit</li> <li>• Power saw (circular)</li> <li>• Pipe cutter (hydraulic)</li> <li>• Caution tape</li> <li>• Sand trap</li> <li>• Flotation booms if necessary</li> <li>• Self Contained Breathing Apparatus (SCBA)</li> </ul>

**PROBLEM: Air Release and Vacuum Relief Valve Failure**

**EMERGENCY PROCEDURES:**

- These valves require frequent inspection and maintenance. Their failure is often found during routine inspections. Both these valves may fail to operate reliably if grease is allowed to accumulate in the valve or on the operating mechanism.
- Inspection crew should inspect valves in accordance with the specific manufacture's recommendations.
- Attach fittings at the top and the bottom to permit back flushing of all valves upon initial installation.
- Isolate the valve from the force-main by closing the shutoff valve attached to the force-main.
- To clean the internal components of the valve(s), attach a backflushing hose to a pressurized water source using a quick disconnect coupling.
- Place a blow off discharge hose in a container to collect the backflush water from the blow off valve. This is waste water that should not be discharged onto the street or into the valve pit.
- Open the shutoff valve and backflush the valve through the blow off valve at the bottom.
- If you are using a potable (drinking) water source, provide the system with an anti-siphon device or back flow to prevent contamination of the potable water.
- Make out a report indicating; the time of the call, description of the problem, how the repair was made, personnel present and equipment used.
- If sewage bypassed the collection system, file DEP Bypass Notification Log and Bypass Report Form as required by NPDES Permit.

<b>Minimum Levels of Staffing (people): 3</b>	
<b>Minimum Emergency Equipment</b>	<b>Specialized Equipment</b>
<ul style="list-style-type: none"> <li>• Jet flushing unit if available (sand trap)</li> <li>• Rodding machine &amp; associated cleaning/cutting attachments (sand trap)</li> <li>• Standard disinfectants</li> <li>• Safety harness and lifeline if applicable</li> <li>• Air blower with hose</li> <li>• Power vacuum</li> <li>• Portable pumps</li> <li>• Portable generators</li> <li>• Safety cones/barricades</li> <li>• Gas meter-for oxygen deficient, explosive or toxic gases</li> <li>• Confined space entry tri-pod and associated equipment</li> </ul>	<ul style="list-style-type: none"> <li>• TV camera unit</li> <li>• Truck with hoist</li> <li>• Vactor unit</li> <li>• Power saw (circular)</li> <li>• Pipe cutter (hydraulic)</li> <li>• Caution tape</li> <li>• Sand trap</li> <li>• Flotation booms if necessary</li> <li>• Self Contained Breathing Apparatus (SCBA)</li> </ul>

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**PROBLEM: Cavities and Depressions in Streets and Lawns**

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**EMERGENCY PROCEDURES:**

- When a call is received from the public, confirm the following:
  1. The location is in fact a cavity or depression and not a missing manhole cover, gate box cover or catch basin grate.
  2. The location is not a high or low manhole casting or gate box. If there is any question as to whether or not it is a cavity or problem with a casting, check the location at a convenient time.
  3. Advise the caller that the problem will be taken care of.
  4. Obtain the location of the reported cavity and if possible the name and address of the party making the call.
- If the caller indicates the problem is severe, extensive or obviously associated with the sewer or water system, investigate and barricade the condition if it appears appropriate to do so. If the situation is dangerous, protect it with lights and barricades. Notify water company immediately to aid in the cause investigation.
- When checking a depression over a main sewer, it is important to check the main sewer at both the upstream and downstream manholes adjacent to the depression to determine if there is a restriction of flow. If there is a blockage, it may indicate a possible main sewer break.
- If the cavity is a result of a sewer failure, refer to procedures for sewer main collapse and repair as appropriate.
- If it has been determined that it is a cavity or depression caused by other utilities (storm drain, water main, etc.), the crew leader will notify the city/town's Highway Department, and request that the cavity or depression be barricaded.
- The crew leader should take appropriate still photographs and video footage; if possible, of the outdoor area of the sewer over flow and impacted area to thoroughly document the nature and extent of the impacts.
- Make out a report indicating; the time of the call, description of the problem, how the repair was made, personnel present and equipment used
- If sewage bypassed the collection system, file DEP Bypass Notification Log and Bypass Report Form as required by NPDES Permit.

Minimum Levels of Staffing (people): 1	
Minimum Emergency Equipment	Specialized Equipment
<ul style="list-style-type: none"> <li>• Barrels</li> <li>• Barricades with flashing lights</li> <li>• Flash light</li> <li>• Safety cones</li> <li>• Personal protection equipment</li> <li>• Hard hats, etc.</li> </ul>	